UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,732	01/05/2007	Christian Hubschwerlen	64391(41925)	9693

21874 7590 12/19/2008

EDWARDS ANGELL PALMER & DODGE LLP
P.O. BOX 55874
BOSTON, MA 02205

EXAMINER	
ZAREK, PAUL E	

ART UNIT	PAPER NUMBER
1617	

MAIL DATE	DELIVERY MODE
12/19/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/554,732	HUBSCHWERLEN ET AL.	
	Examiner	Art Unit	
	Paul Zarek	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28-53* is/are pending in the application.

4a) Of the above claim(s) *33,39 and 44* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28-32,34-38,40-43 and 45-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/28/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

1. Claims 41-43, 46, and 47 have been amended by the Applicant in correspondence filed on 10/29/2008. Claims 28-53 are currently pending. This is the first Office Action on the merits of the claim(s).

Election/Restrictions

2. Applicant's election without traverse of Group I, drawn to a method of treating a subject suffering or susceptible to anthrax or an infection comprising administration of formula (I) wherein A is piperidine and R3 and R5 are not cyclized in the reply filed on 10/29/2008 is acknowledged. It is acknowledged that –O-Z-piperidine reads on this group. Acknowledgement is also made of the elected species, as disclosed in Example 76 of the instant specification.

3. Claims 28-32, 34-38, 40-43, and 45-53 read on the elected species. Claims 39 and 44 are withdrawn as being drawn to a nonelected species. Claim 33 is withdrawn as being drawn to a nonelected Group.

Priority

4. Applicant's claim for the benefit of a prior-filed international application PCT/EP04/03650 (filed on 04/06/2004) which claims the benefit of provisional applications 60/466,945 and 60/530,822 (filed on 04/30/2003 and 12/18/2003, respectively) under 35 U.S.C.

119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. The effective filing date of the instant application is 04/30/2003.

Claim Objections

10. Claims 28 and 53 are objected to because of the following informalities: Both claims recite the limitation of R3 and R5 being linked. In this limitation is the phrase following a semicolon, "in case R3 is no H and R5 is no H, F, OH, NH_2 or Cl." As written, this limitation is unclear. Examiner interprets this phrase to be "in this case R3 is not H and R5 is not H, F, OH, NH_2 or Cl." Appropriate correction is required.

Claim Rejections - 35 USC § 112 (1st paragraph)

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 28-32, 34-38, 40-43, and 48-53 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The rejected claims are drawn to a method of treating a subject suffering or susceptible to anthrax or an infection comprising administration of a compound of Formula (I). Formula (I) contains the substituents R3, R4, and R8, which can be a heterocycloalkyl group, a heteroaryl group, or a heteroarylalkyl group. The instant specification

defines a heterocyclic group to include cycloalkyl or aryl groups in which "one, two or more carbon ring-atoms are replaced by one, two, or more oxygen, nitrogen, phosphorous, or sulfur atoms, or $S(O)_{1-2}$ groups" (pg 6, lines 25-28).

7. Applicant has written support for some heteroaryl substituents, such as pyridyl (Example 5). Applicant has not disclosed any compounds in which the heterocycloalkyl, heteroaryl, or heteroarylalkyl group contains more than 1 nitrogen, or any of number of oxygen, nitrogen, phosphorous, or sulfur atoms, or $S(O)_{1-2}$ groups. One embodiment is not sufficient for one of ordinary skill in the art to draw general conclusions about the claimed compounds in which R3, R4, and/or R8 are generically a heterocycloalkyl, heteroaryl, or heteroarylalkyl group. There are numerous heteroaryl and heterocycloalkyl groups that are encompassed by Claims 28-32, 34-38, 40-43, and 48-53 which are not supported by the instant specification (i.e. triazetidine or pyrazolo-trazine). "A patent is not a hunting license. It is not a reward for search but compensation for its successful conclusion and patent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable." (*Genentech v. Novo Nordisk* 42 USPQ 2d 1001) Therefore, Claims 28-32, 34-38, 40-43, and 48-53 lack sufficient written description to suggest that Applicant was in possession of all or most of the invention encompassed by the rejected claims.

8. Claims 28-32, 34-38, 40-43, and 48-53 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for method of treating a subject with anthrax comprising administration of compounds of formula (I) where a heterocycloalkyl ring or a heteroaryl ring is a ring that includes 1 or 2 nitrogens, does not reasonably provide enablement for method of treating a subject with anthrax comprising administration of compounds of

formula (I) wherein a heterocycloalkyl ring or a heteroaryl ring includes 3 or more nitrogens, or any oxygen, phosphorus, boron, or sulfur as the heteratoms. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

9. *In re Wands*, 858 F.2d at 736-40, 8 USPQ2d at 1403-07, set forth eight factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." (MPEP § 2164.01(a))

a. *The breadth of the claim*: The rejected claims are drawn to a method of treating a subject suffering or susceptible to anthrax or an infection comprising administration of a compound of Formula (I). Formula (I) contains the substituents R3, R4, and R8, which can be a heterocycloalkyl group, a heteroaryl group, or a heteroarylalkyl group. The instant specification defines a heterocyclic group to include cycloalkyl or aryl groups in which "one, two or more carbon ring-atoms are replaced by one, two, or more oxygen, nitrogen, phosphorous, or sulfur atoms, or $S(O)_{1-2}$ groups" (pg 6, lines 25-28);

b. *Nature of the invention*: The nature of the invention is a method of treating anthrax or an infection with a hybrid antibiotic comprising a quinoline and oxazolidinone;

c. *The state of the prior art*: Hybrid molecules structurally related to those claimed to treat anthrax are known to be effective against Gram positive bacteria. Locher (US PreGrant Publication No. 2004/0132764), Gordeev, et al., (International Application No. WO 02/059116), and Hubschwerlen and Specklin (US PreGrant Publication No.

2005/0096343) all teach that chemically linking a derivative of quinolone and oxazolidinone generates an effective antibacterial compound. None of the working embodiments in the prior art disclose any working examples of a heterocyclic group containing 3 or more nitrogens or any of oxygen, sulphur, $S(O)_{1-2}$, phosphorus, or boron;

d. *Level of one of ordinary skill in the art*: One of ordinary skill in the art would be medicinal chemists, infectious disease physicians, veterinarians, or scientists investigating bacterial infections. Such a level of skill would be considered high.

e. *Level of predictability in the art*: Altering the number of heteroatoms within a ring system can lead to unpredictable changes in the properties of the resultant compound. Carey and Sundberg (Advanced Organic Chemistry, Part A: Structure and Mechanisms, 1990) explicitly teach that "[t]he incorporation of heteroatoms can result in stereoelectronic effects that have a pronounced effect on conformation and, ultimately, on reactivity" (pg 146);

f. *Amount of direction provided by the inventor*: Applicant does not discuss the role that various heteroatoms within a heterocyclic group would play in the antibacterial activity of the compounds;

g. *Existence of working examples*: Applicant provides numerous embodiments of the quinoline-oxazolidinone hybrid antibiotic. None of the disclosed compounds contain a heterocycloalkyl, heteroaryl, or heteroarylalkyl group at R4 or R8. Examples 1, 3, 4, 7, 9-38, 42, 46, 49, 51, 53, 55, 57-59, 61-80, 82-85, 87, and 88 contain a cyclopropyl group at R3. Example 5 contains a pyridinyl group at R3. Examples 6, and 60 contains a phenyl group at R3. There are no embodiments in which there are more than 2 nitrogens,

or a heteroatom other than nitrogen (i.e. oxygen or sulfur). Applicant also discloses that all of the compounds "were tested against several strains of *B. anthracis* showed MIC's below 0.03 μg/ml." (pg 86, lines 12-13); and,

h. *Quantity or experimentation needed to make or use the invention based on the content of the disclosure*: There is no reasonable basis for assuming that the myriad of compounds embraced by the claims will all share the same physiological properties since they are so structurally dissimilar as to be chemically non-equivalent. Note *In re Surrey* 151 USPQ 724 regarding sufficiency of disclosure for a Markush group. Also see MPEP § 2164.03 for enablement requirements in cases directed to structure- sensitive arts such as the pharmaceutical art. Thus given the breadth of the claims, the level of unpredictability in the art and the lack of direction (i.e. working examples) provided as to what other ring systems might work, this rejection is applied, the instant specification would not enable one of ordinary skill in the art to make and use the invention commensurate in scope of the rejected claims. Undue and unpredictable experimentation would be required to use the invention as claimed.

10. Claims 28-32, 34-38, 40-43, and 48-53 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for treating a subject suffering from anthrax or a Gram positive bacteria or at an elevated risk to be suffer the disease or infection, does not reasonably provide enablement for treating a subject suffering from an infection by an organism or virus other than Gram positive bacteria, treating a subject conceivably susceptible to anthrax or any infection, or preventing anthrax or any infection. The specification does not enable any

person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

11. *In re Wands*, 858 F.2d at 736-40, 8 USPQ2d at 1403-07, set forth eight factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." (MPEP § 2164.01(a))

a. *The breadth of the claim*: Claims 28-32, 34-38, 40-43, and 48-52 are drawn to a method of treating a subject suffering from or susceptible to anthrax comprising administration of a compound of Formula (I). Claim 53 is drawn to a method of treating a subject suffering from or susceptible to any infection comprising administration of a compound of Formula (I). The instant specification defines "treatment" as an "act of treating." "Treating" is defined as "reversing, alleviating, inhibiting the progress of, or preventing the disorder or condition to which the term applies." (pg 23, lines 22-27) The instant specification does not define what is meant by "infection." Rather, it discloses a list of infections (pgs 23-25). This list is not exclusive; indicating that other infections not listed in the specification are could reasonably be interpreted to as an infection (influenza virus or plasmodium). Therefore, any infection by any organism (i.e. by virus, bacteria, fungus, or parasite) is encompassed by Claim 53. "Susceptible" is not defined by the instant specification. It is reasonable to consider that every subject is susceptible to anthrax or an infection (e.g. a non-zero chance to suffer anthrax or an infection), regardless of how unlikely the event is to occur.

""Prevent" and "prevention" are potent words implying that the method of prevention will necessarily prevent anthrax or an infection in a subject at any point following administration of formula I. Accordingly, if a subject suffers infection from even one bacterium at some point following administration of formula I, then the method is no longer considered to be a prevention method;

b. *Nature of the invention*: See above;

c. *The state of the prior art*: As discussed above, hybrid molecules structurally related to those claimed to treat anthrax are known to be effective against Gram positive bacteria (See, Gordeev, et al., and Hubschwerlen and Specklin).

Petri (Chapter 44 Antimicrobial Agents) and Chambers (Chapter 47 Antimicrobial Agents) (both from Goodman & Gilman's The Pharmacological Basis of Therapeutics, 10th ed., 2001) teach that quinolone and oxazolidinone are known and effective antibiotics.

According to the CDC, the only known prevention method of anthrax is by vaccination;

d. *Level of one of ordinary skill in the art*: See above;

e. *Level of predictability in the art*: Chambers (Chapter 43 Antimicrobial Agents, The Pharmacological Basis of Therapeutics, 10th ed., 2001) teaches that "[a]ntibiotics differ markedly in physical, chemical, and pharmacological properties, in antibacterial spectra, and in mechanisms of action." (pg 1143, col 2, paragraph 1) Chambers goes on to list common therapies for various infections (Table 43-1). For example, penicillin G is

the first drug of choice for treating *B. anthracis*, it is not indicated for the treatment of many Gram negative bacilli, fungi, or viruses.;

f. *Amount of direction provided by the inventor*: Applicant discloses that anthrax is an acute infectious disease caused by *B. anthracis*, and that unchecked infection by *B. anthracis* can lead to septicemia and death (instant specification pg 1, lines 10-24). Applicant does not disclose any other infection, or infectious agent;

g. *Existence of working examples*: The sole working example is a statement indicating that the compounds were tested against several strains of *B. anthracis* and showed MICs below 0.03 μg/mL (pg 86, lines 12-13). Applicant provides no *in vivo* data demonstrating that the claimed compounds would be an effective method of treatment or prevention of anthrax. Applicant provides no data indicating that he claimed compounds are effective against any other infectious agent (i.e. *E. coli*, viruses, fungi, or parasites); and,

h. *Quantity or experimentation needed to make or use the invention based on the content of the disclosure*: Preventing anthrax means that any subject who is ever administered Formula (I) will never suffer the disease. Applicant has not provided any data suggesting that this is possible with antibiotics. Prior art suggests that preventing anthrax can only be achieved through vaccination protocols.

The rejected claims are drawn to treating subjects susceptible to anthrax, or an infection. Without a definition in the instant specification, such a limitation reads on all animals (i.e. human, livestock, alligators), as there is a statistical probability, no matter how small, that every animal will suffer anthrax, or suffer an infection. Being susceptible

to anthrax or an infection does not necessarily mean that the subject will ultimately suffer from anthrax or an infection. If a subject never suffers, and never will suffer, anthrax or an infection independent of administration of Formula (I), it is unclear whether the method of administration would be considered a therapy. Applicant does not define a patient population. Examiner notes, however, that antibiotics such as ciprofloxacin (a quinoline derivative) are given to individuals who are at *elevated risks* of suffering anthrax, or infection by *B. anthracis*, such as those who have been exposed to the bacteria.

Infection is defined as an invasion of the body by an organism that has the potential to cause disease. Preventing infection cannot be achieved by systemic or local administration of a drug, as such administration would kill the invading pathogen only after the infectious agent has infected the body. Applicant has provided no data indicating that the compounds of Formula (I) are can prevent the infection of the subject. Indeed, it is unclear that the compounds of Formula (I) are even capable of preventing such an infection.

Claim 53 is also drawn to a method of treating a subject suffering from an infection. As infection is not defined in the specification, Examiner reasonably interprets this to include infection by any infectious agent, be it bacterial, viral, fungal, parasite, et cetera. Such a broad array of organisms requires specific treatments tailored to the lifecycles germane to the individual organism. Chambers teaches that drugs effective against *B. antrhacis*, for example, would not be effective agents against HIV.

The instant specification does not enable one of ordinary skill in the art to make and use the invention commensurate in scope with the rejected claims. The prior art does not make up for the deficiency in the specification. As such, undue and unpredictable experimentation would be required to make and use the invention as claimed.

10. Claims 28-32, 34-38, 40-43, and 45-53 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of treating a subject suffering anthrax comprising administration of a compound of Formula (I) or a pharmaceutically acceptable salt or formulation thereof, does not reasonably provide enablement for method of treating a subject suffering anthrax comprising administration of a solvate or hydrate of a compound of Formula (I). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

11. *In re Wands*, 858 F.2d at 736-40, 8 USPQ2d at 1403-07, set forth eight factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." (MPEP § 2164.01(a))

a. *The breadth of the claim*: a method of treating a subject suffering anthrax comprising administration of a compound of Formula (I) or a pharmaceutically acceptable salt, solvate, hydrate, or formulation thereof. "Formulation" is not defined in the instant specification. Therefore, Examiner interprets "formulation" in mean a

composition comprising pharmaceutically acceptable excipients, but not a prodrug of Formula (I);

b. *Nature of the invention*: See above;

c. *The state of the prior art*: Approximately one third of drugs are capable of forming crystalline hydrates (Vippagunta, et al., Advanced Drug Delivery Reviews, 2001, pg 15, section 3.1);

d. *Level of one of ordinary skill in the art*: See above;

e. *Level of predictability in the art*: Just because many drugs are capable of forming hydrates or solvates does not mean that the resulting hydrate or solvate can be predicted before hand. Vippagunta, et al., teach that predicting the formation of solvates or hydrates of a compound is "complex and difficult." "There may be too many possibilities so that no computer programs are currently available for predicting the crystal structures of hydrates and solvates." pg 18, Section 3.4);

f. *Amount of direction provided by the inventor*: Applicant provides no direction regarding the manufacture or use of a solvate or hydrate of the compounds of Formula (I);

g. *Existence of working examples*: Applicants provide no working examples with solvates or hydrates of a compound of Formula (I) and the ability of said solvates/hydrates to be effective antibacterial or anti-infectious agents; and,

h. *Quantity or experimentation needed to make or use the invention based on the content of the disclosure*: Vippagunta, et al., is explicit in their statement that the formation of solvates or hydrates can not be known without experimentation. Indeed,

one of ordinary skill in the art could not ascertain which solvates or hydrates would form with any reasonable expectation of success. The instant specification does not make up for this deficiency, as there is no guidance to an ordinarily skilled artisan to either make a solvate or hydrate of a compound of Formula (I) or use said solvate/hydrate to treat anthrax or infections. Undue and unpredictable experimentation would be required to use the invention as claimed.

Claim Rejections - 35 USC § 112 (2nd paragraph)

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 28-32, 34-38, 40-43, and 45-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The rejected claims recite the limitation of R4. It is unclear to what R4 refers, as there is no substituent of Formula (I) with the designation of R4. As such, the metes and bounds of the rejected claims are not known.

13. Claim 51 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 51 recites the limitation "the method of claim 28 wherein a pharmaceutical compositions . . ." in line 1. There is insufficient antecedent basis for this limitation in the claim. Nowhere in Claim 28 is “pharmaceutical composition” recited.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

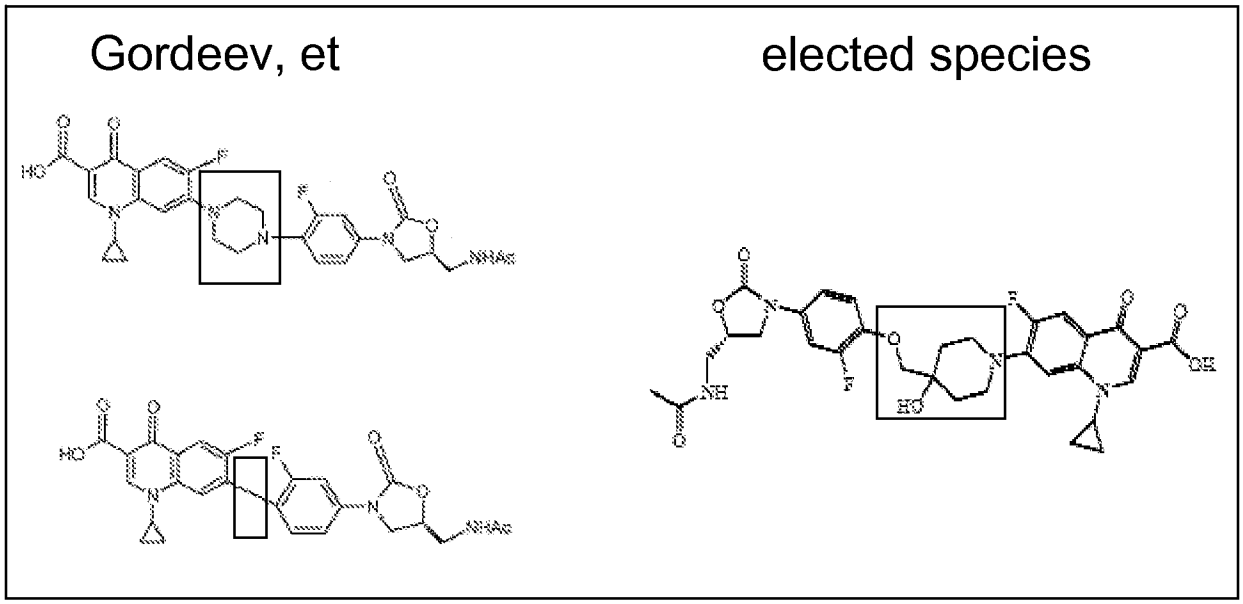
16. Claims 28-32, 34-38, 40-43, and 45-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordeev, et al. (International Application No. WO 02/059116, provided in IDS).

17. Claim 28 of the instant application is drawn to a method of treating a subject suffering or susceptible to anthrax comprising administration of Formula (I), of which 7-(4-{4-[(5S)-5-(Acetylamino-methyl)-2-oxo-oxazolidin-3-yl]-2-fluorophenoxymethyl}-4-hydroxy-piperidin-1-yl)-1-cyclopropyl-6-fluoro-4-oxo-1,4-dihydro-quinoline-3-carboxylic acid (referred to as Example 76 in instant specification) is the elected species, or a pharmacologically acceptable salt, solvate, hydrate, or formulation thereof. Claims 29-32, 34-38, 40-43, 45-50, and 52 limit

the various subgroups of Formula (I). The elected species reads on these claims. Claim 51 limits the administered composition to include one or more compounds of Formula (I) and, optionally, one or more carriers, adjuvants and/or diluents. Claim 53 is drawn to a method of treating a subject suffering or susceptible to an infection comprising administration of one or more compounds of formula (I).

18. Gordeev, et al., disclose three preferred hybrid antibiotics in which a quinolone and oxazolidinone are chemically linked. Gordeev, et al., further disclose that the preferred compound possesses antibacterial activity against various Gram positive bacteria. Gordeev, et al., also teach the preferred compounds as part of a pharmaceutical composition, comprising a carrier or diluent (pg 25, lines 5-21). Finally, Gordeev, et al., discuss using the disclosed compound to treat humans or other mammals (pg 27, lines 6-16. Gordeev, et al., do not disclose the elected species, the effect of the hybrid antibiotics on *B. anthracis*, (which causes anthrax), or treating an animal with anthrax.

19. Two of the three preferred compounds disclosed by Gordeev, et al., (pg 14, line 12) is similar to the elected species (differences in box):



Given that both of the preferred compounds in Gordeev, et al., demonstrate antibacterial activity against numerous Gram positive bacteria, one of ordinary skill in the art would reasonably expect that these compounds would be effective against *B. anthracis*, the microbe that causes anthrax. Furthermore, the ordinarily skilled artisan would predict that the linker between the quinolone and oxazolidinone (in the box) does not dramatically affect the antibacterial ability of the resultant compound because both a hybrid antibiotic retains its antibacterial faculty regardless of whether the linker is a piperazinyl group and covalent bond. Therefore, it would have been *prima facie* obvious to use the elected species for the treatment of anthrax, or bacterial infections.

20. Claims 28-32, 34-38, 40-43, and 45-53 are rejected under 35 U.S.C. 103(a) as being obvious over Locher (US PreGrant Publication No. 2004/0132764, which claims priority to US provisional application 60/420,810, filed on 10/23/2002) in view of Hubschwerlen and Specklin

(US PreGrant Publication No. 2005/0096343, which claims priority to US provisional application 60/327,162, filed on 10/2001).

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

21. Claims 28-32, 34-38, 40-43, and 45-53 are described above.

22. Locher teaches numerous antibiotic compounds which consist of quinolone and oxazolidinone derivatives chemically linked to each other (abstract). Locher also teaches that the compounds possess antibacterial activities against undisclosed bacterial strains from the Morphochem collection. Although Locher does not disclose the elected species, he does teach numerous compounds similar to the elected species such that one of ordinary skill in the art would reasonably predict that the elected species would possess the similar antibacterial

faculties. Example 35 most closely resembles the elected species, the only difference being that Example 35 lacks a hydroxyl group on the 4 position of the piperidine ring. Further, Locher does not disclose which bacteria the hybrid antibiotic would be effective against.

23. Hubschwerlen and Specklin disclose numerous quinolone and oxazolidinone hybrid compounds that demonstrate activity against Gram positive bacteria, such as *S. aureus*, *E. faecalis*, *E. faecium*, and *S. pneumoniae* (paragraphs 0404-0411). Although Hubschwerlen and Specklin do not specifically disclose the elected species, they do teach numerous compounds similar to the elected species such that one of ordinary skill in the art would reasonably predict that the elected species would possess the similar antibacterial faculties. Example 9 most closely resemble the elected species, the differences being a piperazine instead of a piperidine, no hydroxyl group at the 4 position, and -N(CH_2CH_3)- rather than -O- .

24. Taken together, Locher and Hubschwerlen and Specklin teach numerous compounds that possess the same quinolone and oxazolidinone derivatives as the elected species. The only differences being the identity of A (as named by the instant application). The prior art discloses so many variations of these molecules that one of ordinary skill in the art would reasonably expect that the elected species would be an effective treatment for anthrax, which is caused by another Gram-positive bacteria, *B. anthracis*. Therefore it would have been *prima facie* obvious to use the elected compound to treat subjects suffering from anthrax, or an infection by *B. anthracis*, which can cause anthrax.

Conclusion

25. No claims are allowed.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Zarek whose telephone number is (571) 270-5754. The examiner can normally be reached on Monday-Thursday, 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreenivasan Padmanabhan can be reached on (571) 272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PEZ

/Rita J. Desai/
Primary Examiner, Art Unit 1625